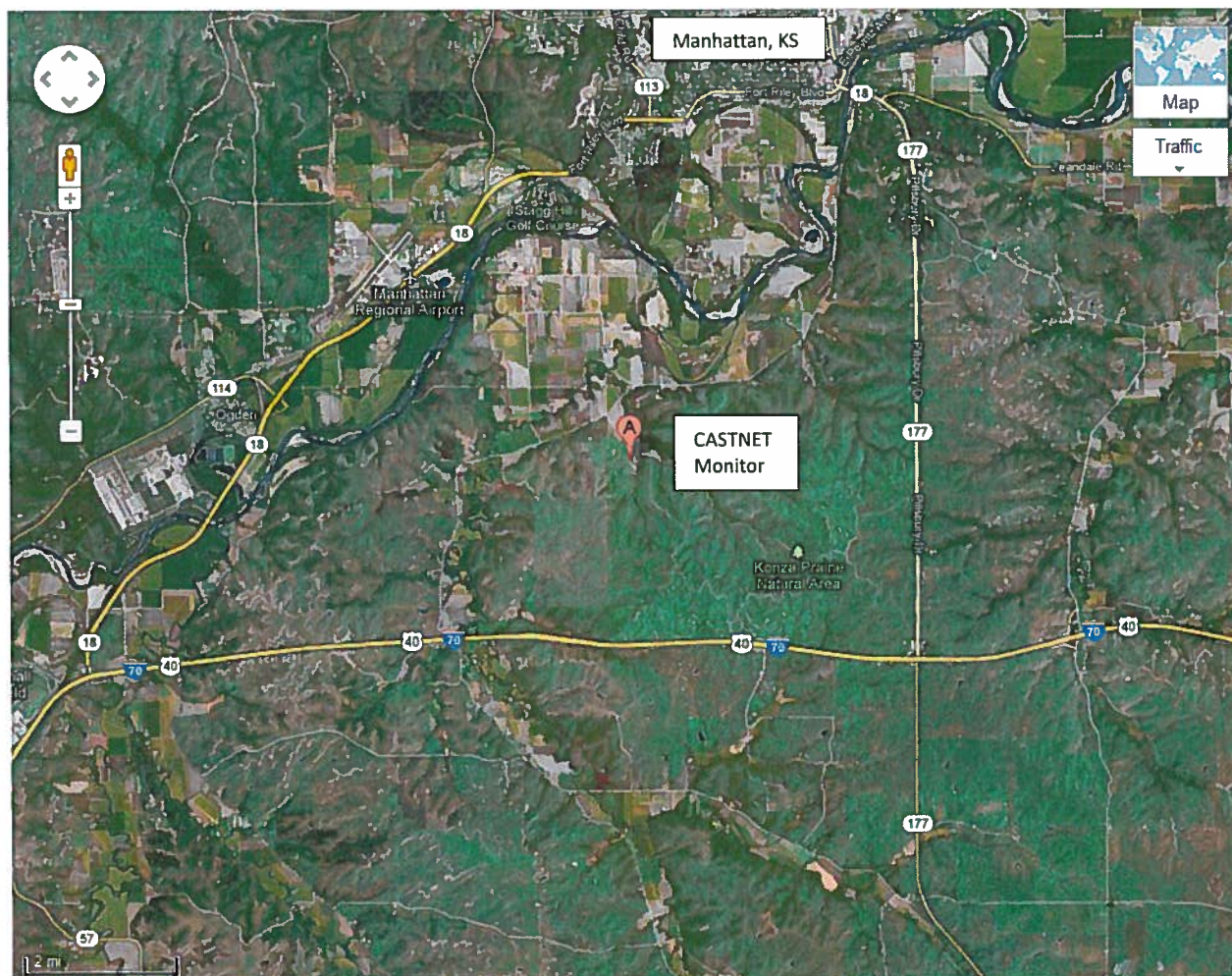


**Clean Air Status and Trends Network (CASTNET)
Concerns for Konza Prairie Regulatory Ozone Monitoring
Briefing Document
March 22, 2013**

Konza CASTNET Location



Konza Prairie Biological Station Research Program:

The 8,600-acre Konza Prairie Preserve, located in the Flint Hills region of northeastern Kansas, is owned by The Nature Conservancy and operated by Kansas State University as a field research station.

The Konza Prairie is divided into 50 watershed units, each subjected to a specific combination of prescribed burning regime (burned at 1, 2, 3, 4, 10, or 20 year intervals, during the Spring, Summer and Fall months).

The long-term prescribed burning treatments were initiated in 1972.

Background

2011 EPA upgraded all ozone monitoring equipment at CASTNET sites to comply with the requirements in 40 Code of Federal Regulations (CFR) Part 58 compliant. Ozone measurements from CASTNET sites are now used to determine if an area meets, or exceeds, the NAAQS.

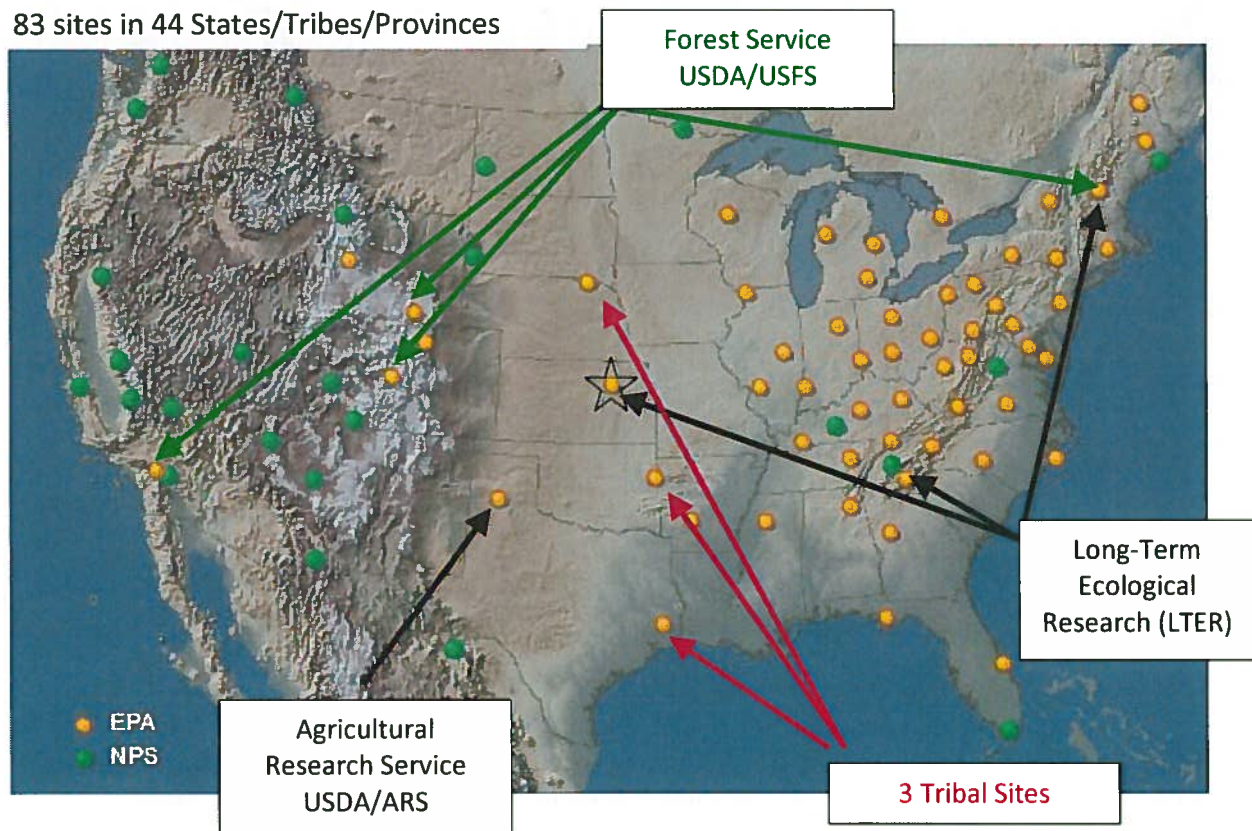
CASTNET monitors are owned by EPA. Ozone data and data management is operated by a contractor.

State Agencies are entitled to use of the data, and have the responsibility, according to the Exceptional Events Rule, to demonstrate if an exceptional event occurred and should be flagged.

The Purpose of the CASTNET Network is to:

- Monitor the status and trends in regional air quality and atmospheric deposition
- Provide information about complex atmospheric chemistry in rural areas
- Provide information on the contribution of atmospheric pollution to ecosystem conditions
- Provide measurements for validating and improving atmospheric models

83 sites in 44 States/Tribes/Provinces



According to 40 CFR Part 58, Appendix E, Section 2.2. "Spacing from Minor Sources" (Applicable to SO₂ and O₃ Monitoring Only)...*the probe or at least 90 percent of the monitoring path must be away from furnace or incineration flues or other minor sources of SO₂ or NO, particularly for open path analyzers because of their potential for greater exposure over the area covered by the monitoring path. The*

separation distance should take into account the heights of the flues, type of waste or fuel burned, and the sulfur content of the fuel.

State Concern for Compliance Use of Konza Prairie CASTNET Monitor

Local minor sources of a primary pollutant, such as SO₂, lead, or particles, can cause high concentrations of that particular pollutant at a monitoring site. If a monitoring site is to be used to determine air quality over a much larger area, such as a neighborhood or city, a monitoring agency should avoid placing a monitor probe, path, or inlet near local, minor sources. The plume from the local minor sources should not be allowed to inappropriately impact the air quality data collected at a site.

- 1) KDHE believes the KNZ184 CASTNET monitor is not properly sited to collect ozone data for regulatory purposes given
 - a. the research fires conducted at that site and their propensity to generate localized emissions,
 - b. the initial purpose of the monitor as a research site (ecosystem assessment) conflicts with its use as a compliance monitor,
 - c. the site does not represent population exposure, and
 - d. the site is duplicative of a better, transport site
- 2) KDHE is concerned about the lack of communication with KDHE during the transition of the monitor to a compliance monitor. KDHE did not find out that the monitor had been upgraded for conversion to a compliance monitor until 2012.
- 3) The Monitor is located in Riley County, which is primarily rural and agriculturally based. There is little to no local industry for reduction of emissions to apply ozone precursor controls.
- 4) State agencies have the responsibility, according to the Exceptional Events Rule, to demonstrate to their EPA region that an exceptional event occurred and should be flagged. Given the frequency of research burns it would be a time consuming and a costly endeavor for KDHE's 3 person staff to develop Exceptional Event demonstration packages for each potential episode and would result in little or no substantial human health or environmental improvement.
- 5) If future monitoring needs result in use of the CASTNET sites for the PM NAAQS, this site could potentially be elevated as contributing to "Ag Dust".

Options that have been discussed between Region 7, OAQPS, CAMD and KDHE

- 1) Exclude data from regulatory decision making during certain time periods of localized controlled burns, specifically, during the ozone season. Research oriented burns are conducted in close proximity to the CASTNET monitor on the same research lands that host the monitor. According to 40 CFR Part 58, such activities impact the ability of the monitor to meet the siting criteria and call into question the validity of the data.
- 2) Discontinue Ozone monitoring at the site.
- 3) Move compliance ozone monitoring to a more suitable, representative site.

Additional Information

OAQPS Position: Evaluation of the back trajectories of burn data from the Kansas State University website and does not show a significant differences between Konza CASTNET site and transport of emissions recorded at other area monitors.

CAMDs Position: The Konza sit has been collecting data for over a decade. Past and future data from the site is important for interpretation of rural transport. Since CAMD is not a regulatory part of EPA, they are more interested in the science, than compliance. They are also concerned that changing the QA and designating the site as a Special Purpose Monitor, may lead to regulatory implications.